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*Group Processes Intergroup Relations* 2013 16: 87

DOI: 10.1177/1368430212454926

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# The effects of transformational leadership on the distinct aspects development of social identity

Group Processes & Intergroup Relations

16(1) 87–104

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DOI: 10.1177/1368430212454926

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Jyun-Wei Huang<sup>1</sup>

## Abstract

Although transformational leadership (TFL) has been extensively investigated, the mechanism and process by which perceived TFL exerts its influence on followers' social identification development behaviors is relatively unexplored. Accordingly, this study proposes a latent growth model based on social identity theory to address these influences. To test the proposed model, data were collected by surveying 1,501 employees of R&D departments at Taiwanese IT firms at multiple points in time over a 10-month period. Therein, we found that as employees perceived more TFL at Time 1, they were more likely to show increases in social identification development behaviors over time. Further, increases in social identification development behaviors demonstrate their positive relationship with task performance and organizational citizenship development behaviors over time. My empirical model confirms all of my proposed hypotheses, and these findings highlight that the potential dynamic consequences of organization behaviors can lead to employee career development.

## Keywords

latent growth model, organizational citizenship behavior, social identity, task performance, transformational leadership

Paper received 17 February 2011; revised version accepted 4 June 2012.

Over the past two decades, organizational researchers have paid considerable attention to the construction of transformational leadership (TFL) (Bass, 1999), which is defined as the extent to which a leader employs idealized influence, inspirational motivation, intellectual stimulation, and individual consideration in order to direct followers into a higher level of thinking (Bass, 1990). The positive association between TFL and follower behaviors is well documented (e.g., Bono

& Judge, 2003; Shamir, House, & Arthur, 1993); however, the mechanism and process by which TFL exerts its influence on followers' social identification via its work organization have not

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been adequately addressed in the literature (Avolio, Zhu, Koh, & Bhatia, 2004; Bono & Judge, 2003; Pittinsky, & Welle, 2008). Therefore, I propose a different mechanism to explain the effects of TFL: One that is rooted not in the perceptions of the leader or self, but, instead, is rooted in how TFL elicits employees' social identification development behaviors over time. One of the powerful influences a leader can have on followers is the "management of meaning" (Smircich & Morgan, 1982), wherein leaders define and shape the "reality" in which followers work. Although previous studies have proposed that leadership may be treated as a factor in the promotion of social identification (e.g., Hogg, Otten & Hinkle, 2004; van Knippenberg & Hogg, 2003), relatively little attention has been devoted to the question of how perceived TFL influences social identification. The first goal of this study is to address how the effects of perceived TFL may influence the development behaviors (change) of social identification among employees at work group, and how these development behaviors subsequently influence task performance (TP) and organizational citizenship behavior (OCB) development behaviors of employees over time.

The emphasis on "development behaviors" in the previous statement denotes a serious shortcoming in the organizational behaviors literature (Bentein, Vandenberg, Vandenberghe, & Stinglhambe, 2005). That is, with rare exceptions (Lance, Vandenberg, & Self, 2000), and even in the case of previous carefully conducted longitudinal studies, the emotional component of social identity (i.e., affective commitment) has been treated as a static variable (i.e., one point in time) in the majority of studies (e.g., Beck & Wilson, 2000; Ray & Mackie, 2009; Rink & Ellemers, 2006, 2010). For example, they employed cross-section data with repeated measures through analysis of variance to test relationships between variables rather than a change perspective of construct. We examine this concern in the present study to yield a wealth of knowledge regarding social identification constructs with their antecedents and consequences from a change perspective over time. Until now, the fundamental

premise that employees may adjust their level of identification (e.g., emotional component of social identity) as a function of the way they interpret and make sense of their work context (Vandenberg & Self, 1993) has remained relatively unexamined. The change in social identification that underlies this question is not trivial because the notion of individual changes in identification is also fundamental to other prominent theories, such as socialization (e.g., Feldman, 1976) and attraction-selection-attrition (e.g., Schneider, 1975). The implication is that change in identification is relevant for these models (theories) of long-term individual productivity. However, the change in social identification is also crucial for practices because practitioners have long been concerned with employees' identification to the organization in light of economic events, such as mergers, acquisitions, or layoffs, all of which change the nature of the relationship between employees and the organization (Brockner, Tyler, & Cooper-Schneider, 1992; Mottola, Bachman, Gaertner, & Dovidio, 1997). The practical implication is that perhaps some inspiration or stimulus (e.g., TFL) may be implemented to enhance the positive changes in identification to increase organization effectiveness.

The social identity theory that Tajfel (1978, p. 63) originally described is a unique and important motivation: "Part of an individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership". Although social identification plays a key role in social identity theory, relatively little attention has been devoted to the question of how exactly this concept should be defined theoretically, or how it can be measured empirically (Ellemers, Kortekaas, & Ouwerkerk, 1999). A significant contribution to the social identity theory is an examination of the multidimensional aspects of social identification in the context of past arguments (e.g., Ashmore, Deaux, & McLaughlin-Volpe, 2004; Ellemers, et al., 1999; Luhtanen & Crocker, 1992). The second limitation of the social identity theory is its content. Brubaker and Cooper (2000) argued that social

identity is too ambiguous and torn between “hard” and “soft” meanings to be capable of adequately serving the demands of social analysis. I suggest that this concern with the conceptual confusion needs to be better articulated. Recognizing that social identification is a multidimensional concept is key to this articulation (Ashmore, Deaux, McLaughlin-Volpe, 2004; Ellemers et al., 1999; Luhtanen & Crocker, 1992). I consider social identification to consist of a cognition aspect (cognitive social identification), affective aspect (emotional social identification), and evaluation aspect (evaluative social identification), and I employ these three dimensions as my social identification concept. Although a previous study has examined the different subfactors of identification (e.g., Ellemers et al., 1999), an investigation of social identification in a work organization not only show the generalizability of the dimensionality of social identification, but also provides insight into the role of social identification in work organization, thereby contributing to the ecological validity of measures of social identification. The second goal of this study is to articulate the content of social identity theory and the means by which it is shaped by TFL effects on dynamic changes in organization.

Taken together, this study employed a latent growth model to examine the effects of perceived TFL on social identification development behaviors. Most previous TFL research has been cross-sectional in nature (e.g., Avolio et al., 2004; Piccolo & Colquitt, 2006) rather than an examination of employee development behaviors as a result of TFL over time. Even longitudinal studies in this area of research have seldom examined how TFL influences changes in organizational development behaviors over time (e.g., Liao & Chuang, 2007). Consequently, I do not have much empirical evidence on whether the consequences of TFL strengthen, weaken, or remain stable over time. By collecting data from 1,501 employees of R&D departments at multiple points in time over a 10-month period, I were able to address these gaps in the literature.

## Theory and development of the hypotheses

### *Social identity theory*

The current research is intended to improve the understanding about the content of social identification rather than to utilize the narrow consideration of the unidimensional context of social identification. According to the definition of social identity theory that was originally proposed by Tajfel (1978, p. 63), social identity is “... that part of an individuals’ self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership”. This conceptualization not only suggests a linkage between social identification and group attachment but also represents an inclusive view of the individual’s identification, which is identified to consist of cognition (awareness of one’s membership in a social group), evaluation (a positive or negative value connotation applied to the group), and emotion (a sense of emotional involvement with the group).

### *The three distinct aspects of social identification*

**Self-categorization** Self-categorization refers to the notion that in many situations, people organize social information by categorizing individuals into groups. This enables individuals to focus on collective properties that are relevant to the situation at hand (e.g., employees vs. supervisors) and neglect the “noise” of other variations (e.g., differences in age) that occurs among individuals within the same group. This process occurs through cognitive processes of categorization, wherein one forms self-categories of organizational membership and one’s similarities with others in the organization (Bergami & Bagozzi, 2000), as well as dissimilarities with others in different organizations (Turner, 1985). Thus, Dutton, Duckerich, and Harquail (1994, p. 242) consider identity to be “the cognitive connection between the definition

of an organization and the definition a person applied to him- or herself". Indeed, as a member increasingly identifies with an organization, his individual self-perception tends to become depersonalized such that the member views himself as an interchangeable representative of the organization, which is otherwise referred to as a social category. These perspectives have interpreted cognitive social identification as the awareness of one's membership in the organization, such as assimilating organization goals as a member's own goals or common attributes so as to form the basis for cognitive social identification. This process makes group behavior possible because it transforms self-conception so that individuals think of themselves in terms of the group prototype; therefore, I adopt the term "self-categorization" as a cognition component of social identification.

**Affective commitment** Allen and Meyer (1996, p. 253) proposed affective commitment to be "identification with, involvement in, and emotional attachment to the organization". Given that we want to draw the concept of "a sense of emotional involvement with the group", "we adopt the term 'affective commitment' to outline the emotional component of social identification" (Bergami & Bagozzi, 2000).

**Group self-esteem** Based on the evaluative component of social identification, we suggest that group self-esteem is an evaluation of self-worth that derives from one's membership in the organization (Bergami & Bagozzi, 2000). In other words, positive or negative value connotations that are attached to the group represent how people think about self-worth in the context of attending a group. Luhtanen and Crocker (1992) have proposed that group self-esteem refers to evaluations of the worthiness or value of the social group; thus, we employ this construct as my evaluative component of identification.

Social identification is usually treated as a unidimensional construct. However, a notable exception is a study by Hinkle, Taylor, Fox-Cardamone, and Crook (1989), who distinguish

three factors in the group identification scale. Although Hinkle et al. (1989) argue a multi-component conceptualization of group identification, the components they distinguish show substantial intercorrelations (between .43 and .58), which seems to have been taken as an indication that a common treatment as one factor would be acceptable for practical purposes. More importantly, this imprecision at the operational level is often reflected in conceptual treatments of social identification, and has resulted in a considerable amount of theoretical confusion (Ellemers et al., 1999). For example, people who acknowledge that they belong to a particular social category (the cognitive component of social identification) do not necessarily feel committed to that group (the emotional component of social identification), or emphasize the positive characteristics of their group (the evaluative component of social identification). Instead, they might prefer to belong to another group, or simply be indifferent to this particular categorization. The key proposal of social identity theory, however, is that it is the extent to which people identify with a particular social group that determines their inclination to behave in terms of their group membership. In this sense, social identification is used to refer to a feeling of affective commitment to the group (the emotional component of social identification), rather than the possibility to distinguish between members of different social categories (the cognitive component of social identification). Therefore, this study proposes that it is important to distinguish cognitive awareness of one's group membership per se (self-categorization) from the extent to which one feels emotionally involved with the group in question (affective commitment). Indeed, previous empirical evidence shows that people who belong to the same social group may show differential responses, depending on the extent to which they feel affectively committed to that group (Ellemers, Van Rijswijk, Roefs, & Simons, 1997). Accordingly, it has also been demonstrated that self-categorization (denoting a cognitive awareness of one's group membership) can be distinguished from

affective commitment to the group (Spears, Doosje, & Ellemers, 1997). On the other hand, this study also distinguishes extent to which people feel emotionally involved with their group (affective commitment) from the value connotation of that particular group membership (group self-esteem). Previous studies have repeatedly argued and demonstrated that the affective commitment and group self-esteem often covary (Ellemers, 1993). In other words, affective commitment tends to be stronger in more positively evaluated groups (because these groups may contribute more to a positive social identification) while people are inclined to distance themselves from less attractive groups. Indeed, previous empirical evidence reveals that, provided their identification as members of a distinct social group is sufficiently important, people may show signs of strong emotional involvement (affective commitment) while simultaneously acknowledging or even emphasizing the negative characteristics of their group (low group self-esteem) (see Mlicki & Ellemers, 1996).

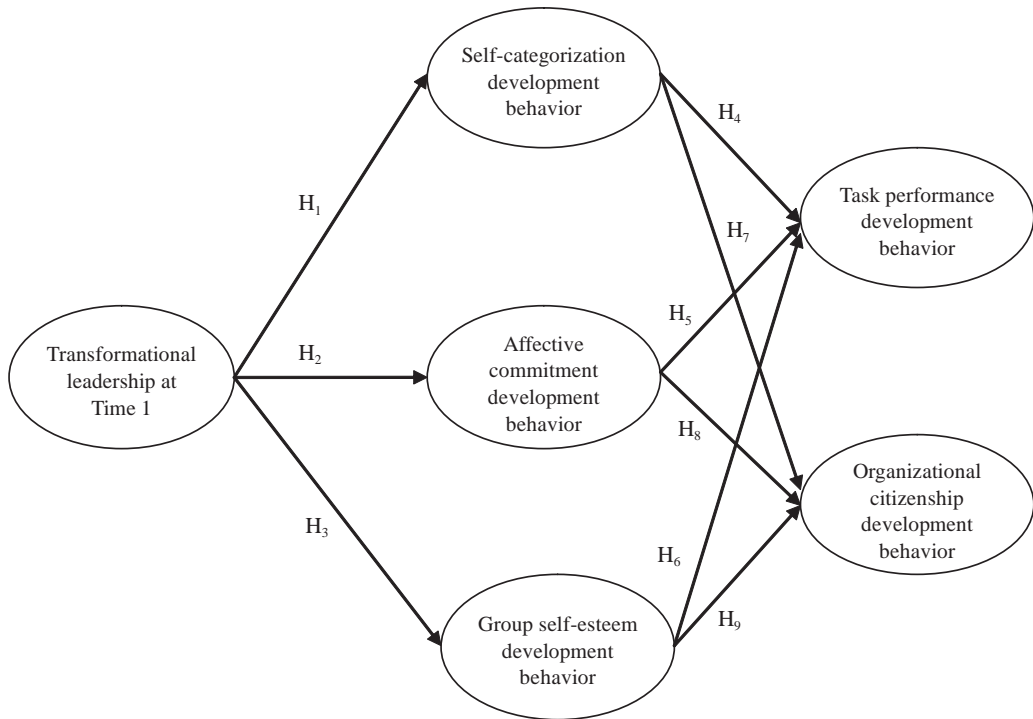
### *Change in the intra-individual*

Past researchers who have investigated the emotional component of social identification have used longitudinal data (repeated measures within groups) and interpreted change through a comparison of group means over time through analyses of variance (ANOVAs), correlations, and regression procedures (e.g., Beck & Wilson, 2000; Farkas & Tetrick, 1989). Beck and Wilson (2000) have attempted to operationalize change in emotional component of social identification by combining cross-sectional and longitudinal data collections, which they defined as a cross-sequential design approach (for technical details, see Beck & Wilson, 2001). However, as underscored by Chan and Schmitt (2000, p. 190), important questions concerning intra-individual change (e.g., change in social identification development behaviors over time) cannot be adequately conceptualized and empirically examined with any of these traditional approaches. These

questions concern (a) the form of the intra-individual change trajectories (i.e., whether linear or nonlinear, positive, or negative), (b) the systematic individual differences at initial status and in the rate of intraindividual change, (c) the consequences and antecedents of both an individual's initial status on the construct of interest and his or her rate of change on that construct across time, (d) whether there is a relationship between an individual's initial status and rate of change on the construct of interest, and (e) whether the change in one variable is related to the change in another.

Latent growth modeling (LGM) has recently gained widespread acceptance as a powerful approach to the description, measurement, and analysis of longitudinal change and, therefore, as a means to address the above questions (Lance et al., 2000, p. 108). Its acceptance is due in large part to the fact that LGM overcomes many of the problems characterizing other approaches (e.g., repeated measures, regression, difference scores) encountered in attempting to operationalize longitudinal change (for comparative reviews, see Chan, 1998; Duncan, Duncan, & Strycker, 2006; Lance et al., 2000). To capture intra-individual change, LGM develops a trajectory of change along each of the focal constructs for each individual across time, aside from the individual's initial status on the constructs (Willett & Sayer 1994). The LGM approach requires that the constructs be measured at several occasions (at least 3) in order to define second-order or higher order latent constructs, initial status, and change (i.e., slope) of the variable(s) of interest. More precisely, the first-order latent constructs representing the variable of interest (e.g., latent affective commitment constructs at Times 1, 2, and 3), display a separate loading on second-order latent factors, one defining initial status and the other defining the rate of change along the first-order constructs (i.e., the affective commitment construct). This is referred to as second-order factor LGM. By applying LGM into my proposed model, not only can I detect how intra-individual change trajectories in social identification development behaviors are affected by the





**Figure 1.** Research model for this study.

perception of TFL at Time 1—as underscored by Chan and Schmitt (2000)—but also determine how these change trajectories in social identification subsequently affect change trajectories in job performance (i.e., OCB and TP); this will permit us to test the hypothesized associations among changes in those constructs. As mentioned above, I can accurately represent the true conceptual premises regarding the evolution of change in social identification and the impact of those changes in the job performance process.

### *Research framework and hypotheses development*

I draw on extant literature to propose that the perception of TFL at Time 1 may positively relate to social identification development behaviors and then use these development behaviors to positively predict OCB and TP development behaviors (see Fig. 1).

### *Antecedents of social identification*

Researchers have proposed that TFL behaviors consist of four components (Bass, 1985). Idealized influence is the first dimension, which refers to the degree to which leaders behave in charismatic ways that cause followers to identify with them. Inspirational motivation is the second dimension, which refers to the degree to which leaders articulate visions that are appealing to followers. Individualized consideration is the third dimension, which refers to the degree to which leaders attend to followers' needs, act as mentors or coaches, and listen to followers' concerns. Intellectual stimulation is the fourth dimension, which refers to the degree to which leaders encourage followers to challenge assumptions, take risks, and solicit followers' ideas.

Conceptual work has drawn attention to the link between leadership processes and followers psychologically belonging to a group (e.g., van Knippenberg, van Knippenberg, De Cremer, &

Hogg, 2004). Regarding the role of TFL for organizational self-categorization, Shamir et al. (1993) have suggested that transformational leaders transform the self-concepts of the followers, build personal identification among followers with the mission and goals of the organization, and further enhance followers' feelings of involvement, cohesiveness, commitment, potency, and performance. Furthermore, Lord, Brown, and Freiberg (1999) have also suggested that the effectiveness of specific leadership behaviors will depend on followers' self-concepts, and TFL behaviors via collective goals and inspiring a common vision make subordinates' collective identification more salient. However, no empirical study has investigated the role of TFL as a predictor in the self-categorization of behavior development perspectives over time. Therefore, I propose the hypothesis as follows:

**Hypothesis 1** Greater perceptions of transformational leadership at Time 1 result in more self-categorization development behaviors over time.

Prior research suggests that work experiences, in addition to personal and organizational factors, serve as antecedents to affective commitment (e.g., Allen & Meyer, 1990, 1996). One such personal and organizational factor that is considered a key determinant of affective commitment is leadership (Mowday, Porter, & Steers, 1982). In particular, there is considerable research that suggests that TFL is positively associated with affective commitment in a variety of organizational settings and cultures (e.g., Avolio et al., 2004; Bono & Judge, 2003; Walumbwa & Lawler, 2003). Research by Shamir, Zakay, Breinin, and Popper (1998) suggests that TFL are able to influence followers' affective commitments by promoting higher levels of goal accomplishment-associated intrinsic value, emphasizing the links between follower effort and goal achievement, and creating higher levels of personal commitment between the leader and followers to common visions, missions, and organizational goals. By encouraging followers to seek new ways to approach problems and challenges and identifying with followers' needs, transformational leaders are able to

motivate their followers to become more involved in their work, resulting in higher levels of affective commitment (Walumbwa & Lawler, 2003). However, no empirical research has focused on the processes by which TFL predicts affective commitment from the perspective of development behaviors over time. Therefore, I propose the hypothesis as follows:

**Hypothesis 2** Greater perceptions of transformational leadership at Time 1 result in more affective commitment development behaviors over time.

The third component of social identification is group self-esteem, which is defined as individuals' appraisals of their own worthiness and confidence specific to the organizational setting (Bergami & Bagozzi, 2000). Transformational leaders can build team spirit through their enthusiasm, high moral standards, integrity, and optimism, and they provide meaning and challenge to their followers' work by enhancing followers' levels of self-confidence and meaning (Avolio et al., 2004). In addition, Shamir et al. (1993) have proposed that transformational leaders produce a high level of self-esteem and a great sense of self-worth in their followers. However, no empirical study has examined the role of TFL as a predictor of followers' development behaviors in the context of group self-esteem over time. Therefore, I propose the hypothesis as follows:

**Hypothesis 3** Greater perceptions of transformational leadership at Time 1 result in more group self-esteem development behaviors over time.

### *Consequences of social identification*

Individuals' job performances consist of distinct sets of activities that contribute to an organization in different ways (Campbell 1990). The first narrow aspect of job performance is task performance, which is defined as activities that are directly involved in the accomplishment of core job tasks or activities that directly support the accomplishment of tasks involved in an



organization's technical core (Borman & Motowidlo, 1993). Based on the perspective of social identification, individuals with more identification will engage their cognitive, emotional, and evaluative identifications into their work groups and should exhibit enhanced performance because they have excellent coherence with their fellows for their tasks. They are more attentive and more focused on coherence and, therefore, may be more cognitively, emotionally, and evaluatively connected to the tasks. For example, an employee with high self-categorization, affective commitment, and group self-esteem may see the goal of organization as his own goal, put more effort into their work and have confidence to perform their tasks to achieve good TP. Previous studies have also argued that self-categorization, affective commitment, and group self-esteem are connected to performance (e.g., Judge & Bono, 2001; Van Knippenberg et al., 2004); however, no empirical research has focused on that increases in social identification fosters increases in followers' TP development behaviors. Therefore, I propose the hypotheses as follows:

**Hypothesis 4** The greater the increases in self-categorization development behaviors, the greater the increases in task performance development behaviors will be over time.

**Hypothesis 5** The greater the increases in affective commitment development behaviors, the greater the increases in task performance development behaviors will be over time.

**Hypothesis 6** The greater the increases in group self-esteem development behaviors, the greater the increases in task performance development behaviors will be over time.

Job performance includes not only direct task performance but also less-formal "emergent" behaviors that contribute to organizations in a less direct capacity (Motowidlo, Borman, & Schmit, 1997). The label for these less-formal emergent behaviors is organizational citizenship

behavior (OCB) (Organ 1988), which do not directly contribute to an organization's technical core, but rather, they contribute to the organization by fostering a social and psychological environment that is conducive to the accomplishment of work that is involved in the organization's technical core (Motowidlo et al., 1997). To the extent that individuals with more identity engage themselves more fully with their work groups while at work than those who have less identity, they should be more willing to step outside of the bounds of their formally defined jobs and engage in acts that constitute organizational citizenship behavior. Previous studies have argued that employees with high social identity have greater attachment or affect toward their organization (e.g., Bergami & Bagozzi, 2000; Ellemers et al., 1999); however, no empirical research has focused on that increases in social identification fosters increases in followers' organizational citizenship behavior. Therefore, I propose the hypotheses as follow:

**Hypothesis 7** The greater the increases in self-categorization development behaviors, the greater the increases in organizational citizenship behavior development behaviors will be over time.

**Hypothesis 8** The greater the increases in affective commitment development behaviors, the greater the increases in organizational citizenship behavior development will be over time.

**Hypothesis 9** The greater the increases in group self-esteem development behaviors, the greater the increases in organizational citizenship behavior development will be over time.

## Methodology

My conceptual model (Fig. 1) starts from TFL to job performance based social identity theory. The model then illustrates a series of mechanisms that I propose to explain the effects of perceived TFL on its consequences.

## Measures

The constructs in this study are measured using 7-point Likert scales drawn from existing literature. Two doctoral and 5 EMBA students specializing in organizational behavior were invited to help refine the questionnaire items to ensure content validity of scale. Finally, backward translation was applied to compare an English version questionnaire to a Chinese version (Reynolds, Diamantopoulos, & Schlegelmilch, 1993). A high degree of consistency between the 2 questionnaires assures that the translation process of this study did not introduce serious translation biases in the Chinese version of the questionnaire.

**Transformational leadership** The 4 dimensions of transformational leadership were measured with items from the Multifactor Leadership Questionnaire (MLQ Form 5X, Bass & Avolio, 1995). Four items were used to measure intellectual stimulation (e.g., “My supervisor ... seeks differing perspectives when solving problems”), inspirational motivation (e.g., “... articulates a compelling vision of the future”), and individualized consideration (e.g., “... treats me as an individual rather than just a member of a group”). Eight items were used to measure idealized influence (e.g., “... instills pride in me for being associated with him/her”).

**Self-categorization** The 3 Likert items developed and validated by Ellemers et al. (1999) were used. Participants indicated the agreement of statements, such as, “I identify with other fellows of my work group”, “I am like other fellows of work group”, and “My work group is an important reflection of who I am”

**Affective commitment** The 7 items validated by Bergami and Bagozzi (2000), based on the earlier work of Allen and Mayer's (1990) Affective commitment scale were used. Items for “joy” were, “I will be very happy ...”, “I enjoy ...”, “I really feel someone's problems are my own within my group”, and “Someone has great deal of

personal meaning for me ...”. Items for “love” or attachment affect factors were, “I feel like part of the family at someone within my group”, “I feel emotionally attached to my group”, and “I feel a strong sense of belonging to my group”.

**Group self-esteem** The six items validated by Bergami and Bagozzi (2000), based on the earlier work of Heatherton and Polivy's state self-esteem, were used. Items are, “I feel confident about my abilities around here”, “I feel that others respect and admire me around here”, “I feel as smart as others around here”, “I feel good about myself around here”, “I feel confident that I understand things around here”, and “I feel aware of or am conscious of myself around here”.

**Task performance** Supervisors were also asked to complete the 7-item scale developed by Williams and Anderson (1991). Supervisors indicated the extent to which they agreed with statements about their subordinates' performance, such as, “This employee ... adequately completes assigned duties” and “... fulfills responsibilities specified in his/her job description”.

**Organizational citizenship behavior** Supervisors were also asked to complete the 16-item measure of OCB published by Lee and Allen (2002), indicating the extent to which they agreed with statements about their subordinates' behavior. Items included, “This employee ... helps others who have been absent”, “... assists others with their duties”, and “... offers ideas to improve the functioning of the organization”.

## Subjects and procedures

I tested the proposed theoretical framework using data that were collected in 3 phases (e.g., 3 points in time over a 10-month period) from R&D departments in the information technology (IT) industry in Taiwan. The IT industry was selected to represent my sample because the Taiwanese IT industry is highly developed in the world. I used a commercial directory as my

sample list, which involved cooperation between industry and a prominent private university in Taiwan. I corresponded with supervisors of R&D departments in order to recruit voluntary participants to the survey. As an incentive, survey respondents were provided with gifts when they completed my questionnaires.

After I received the initial responses of the employees regarding their assessments of transformational leadership (TFL), self-categorization (SC), affective commitment (AC), and group self-esteem (GSE) as well as the initial responses of the supervisors regarding their assessments of organizational citizenship behavior (OCB) and task performance (TP) at the first measurement point in time, I surveyed the employees and supervisors again in reference to these attributes 5 months later. Ten months after the responses of the first survey were collected, I performed a third survey to investigate the same aforementioned respective data among employees and supervisors. This 3-wave survey method was also adopted for a longitudinal research investigation of organization development behaviors (e.g., Ng & Feldman, 2010). Each wave of the survey was completed within a 1-week span. I adopted a 5-month lag between survey collections over a 10-month period because (a) changes in organizational development behaviors should be visible over 4 months (Ng & Feldman, 2010), and (b) previous studies that have used latent growth model analyses to study employee behaviors have adopted similar time frames (Chan & Schmitt, 2000; Jokisaari & Nurmi, 2009; Lance et al., 2000). In previous studies, time intervals that were as short as 1 month and as long as 6 months have been used (e.g., Hobman & Bordia, 2006), and these studies suggest that employees do change their behaviors within the 4-month time frame (Ng & Feldman, 2010). Therefore, the 5-month time frame that was used in this study should be appropriate for testing the latent growth model. In addition, the use of information that has been obtained from multiple sources and multiple times in a longitudinal design allows us to reduce common-method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

**Phase 1** At Time 1, the 211 supervisors of the R&D departments were asked to participate in this academic study and recruit employees from their R&D departments. Of these 211 supervisors, 155 agreed to provide a list of employees who would voluntarily participate in the survey. The sample list included 1,700 employees of R&D departments in Taiwan. The employees were asked to assess their supervisors' TFL and their SC, AC, and GSE for their groups. The supervisors were asked to assess their employee's TP and OCB. To ensure confidentiality, I adopted a questionnaire marking code such that the respondents would not be readily identifiable and notified the employee participants that their supervisors would not receive their responses. With the supervisors' support, I obtained 1,652 responses at a high response rate of 97.1%, and the final usable sample included 1,650 responses.

**Phase 2** The Time 2 survey was sent to the 1,650 employees and their supervisors who had participated in the Time 1 survey, and I retrieved 1,606 usable samples, which constituted a response rate of 94.4%. The second employee survey, which assessed SC, AC, and GSE for their work groups, and the second supervisor survey, which assessed TP and OCB for their employees, were administered 5 months after the initial data were collected.

**Phase 3** Ten months later, at Time 3, I again collected employee and supervisor assessments. Ten supervisors were dropped because these supervisors were not available when I attempted to correspond with them or they had left the R&D department; hence, I also dropped 50 employees who were associated with these supervisors because they did not receive TP and OCB supervisor assessments. We obtained usable evaluations from 1,501 employees who participated in Time 1 and Time 2 of the study. The final usable sample represents an 88.3% retention rate of employee responses and a 94.3% response rate of supervisors from the initial sample list in Phase 1, which is a rate that is comparable to what has been reported in other longitudinal

studies (e.g., Cable and DeRue, 2002; Liao and Chuang, 2007; Ng & Feldman, 2010). Non-response bias was tested using the *t*-test, which indicated no significant difference.

The effective sample size for the current study was 1,501. The average age of the participants in the study was 35 years. A total of 51% of the respondents were female, and 50% of the respondents were married. The average job tenure was 3.8 years. Finally, 59% of the sample had at least some college education.

### *Data analysis*

**Confirmatory factor analysis** CFA analysis was performed on all of the items that corresponded to the six constructs that were measured using Likert-type scales. These variables include perception of TFL (Time 1), SC (Time 1, 2, and 3), AC (Time 1, 2, and 3), GSE (Time 1, 2, and 3), TP (Time 1, 2, and 3), and OCB (Time 1, 2, and 3). The Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) for these variables were all greater than the modest criteria (e.g.,  $\alpha > .7$ ,  $CR > .6$ ,  $AVE > .5$ , Fornell & Larcker, 1981). The overall goodness-of-fit of models (e.g., the model in Time 1, 2, and 3) all fit the criteria that were originally established by Fornell and Larcker (1981) (e.g., The RMR for the three models were all less than .05, the RMSE were all less than .08, and the CFI, GFI, and NFI were all greater than .09). For example, the RMR, RMSE, CFI, GFI, and NFI of the CFA model at Time 1, including the construct of TFL, SC, AC, GSE, TP, and OCB measured at Time 1, are respectively 0.048, 0.078, 0.92, 0.93, and 0.91. The RMR, RMSE, CFI, GFI, and NFI of the CFA model at Time 2, including the construct of SC, AC, GSE, TP, and OCB measured at Time 2, are respectively 0.045, 0.075, 0.93, 0.94, and 0.93. The RMR, RMSE, CFI, GFI, and NFI of the CFA model at Time 3, including the construct of SC, AC, GSE, TP, and OCB measured at Time 3, are respectively 0.044, 0.076, 0.92, 0.91, and 0.94. Finally, all factor loadings for the indicators that measured the same construct were all statistically significant. The discriminant validity of my

collected data was confirmed via the chi-square difference test. Finally, I tested whether these scales longitudinally demonstrated measurement invariance (Chan, 1998; Vandenberg & Lance, 2000). Based on chi-square difference tests, none of the items had significantly different factor loadings at the 3 points in time (e.g., Time 1, 2, and 3); hence, my measured factor structures, both theoretically and methodologically speaking, are invariant and stable (Lance et al., 2000).

**Latent growth model** Latent growth model (LGM) is an extension of structural equation modeling, and it can be used to assess changes in the levels of variables over time and how these changes are related to other constructs. For example, there are 3 measurement waves in my survey (e.g., 3 points in time over a 10-month period in my study), LGM allows for the assessment of linear change on social identity and job performance development behaviors over time. The latent growth model that include covariates that may affect the trajectory of change has been able to examine the strengths of the relationships of the covariates with the latent intercept factor (e.g., representing the average initial status of individuals via measurement) and the latent slope factor (representing the rate of change over time) using these models (Ng & Feldman, 2010). In addition, the latent growth model has been applied in organizational studies to assess changes in the levels of individual behaviors (e.g., Bentein et al., 2005; Lance et al., 2000; Ng & Feldman, 2010).

To identify the intercept factor (latent intercept factor), the loadings from the intercept factor to each of the 3 repeated measures are fixed to 1.0; hence, the intercept factor equally influences all repeated measures. As prescribed by Duncan et al. (2006) and suggested by Ng and Feldman (2010), the loadings from the slope factor (latent slope factor) to each of the 3 repeated measures are fixed to values of 0, 1, or 2 for positive linear changes. The first loading is specified to be 0 such that the intercept factor will reflect the mean values of measures at Time 1 (Bollen & Curran, 2006). To test the significance among

constructs (or variables) for my model, a second-order-factor LGM approach was employed. The perceptions of TFL that are measured at Time 1 were specified to be associated with both the initial status factor and the slope factor (the trajectory of change) of SC, AC, and GSE development behaviors. In addition, the initial status and the slope factor of SC, AC, and GSE development behaviors were specified to be related to the initial status and slope factors of TP and OCB. Each first-order latent factor was represented by its respective measurement items (e.g., affective commitment at Time 1 and its 7 measurement items, such as Y1 to Y7), and the error variances of those measurement items that were repeatedly used across time points were allowed to be correlated (Singer, 1998). For example, the perceptions of TFL that are measured at Time 1 were specified to be associated with both the initial status factor and the slope factor (the trajectory of changes) of WE behavior development; and further, the initial status and the slope factor of WE behavior development were specified to be related to the initial status and slope factors of SP and WFC behavior development. Each first-order latent factor was represented by its respective measurement items, and the error variances of those measurement items that were repeatedly used across time points were allowed to be correlated (Singer, 1998). To understand the operation of parameters in LGM, I suggest readers to refer to several paradigmatic studies for more technical details of LGM use, including Bentein et al. (2005); Chan (1998); Chan, Ramey, Ramey, and Schmitt (2000); Duncan et al. (2006); Lance et al. (2000); and Singer (1998).

Finally, it is important to note that I have included age, gender, and job tenure as control variables in my model testing, due to they may differently affect the perceptions of TFL and social identity development behaviors (Bass, 1999; Mael & Ashforth, 1992).

### *The results of analysis*

My *results of analysis* are based on the assumptions that the perception of TFL at Time 1 will affect

the trajectory of change (increase) in social identity and that the trajectory of change (increase) in social identity may also elicit subsequent trajectory of changes (increase) in TP and OCB (please see Fig. 2).

The analysis results of my proposed model suggest that the fit of my proposed model is acceptable (e.g., SRMR: .07, RMSEA: .05, CFI: .92) (Fornell & Larcker, 1981). Based on the acceptable fit of my proposed model, I examined the parameter estimates that were contained in the model in order to test my hypotheses. Hypotheses 1, 2, and 3 predict that perceptions of higher TFL at Time 1 would be associated with greater increases in SC, AC, and GSE development behaviors over time. These hypotheses are supported, as shown in Table 1. The perceptions of TFL at Time 1 were associated with increases in SC development behaviors (0.23,  $p < .01$ ), AC development behaviors (0.36,  $p < .01$ ), and GSE development behaviors (0.13,  $p < .01$ ). The hypotheses that state that individuals who perceived themselves as highly TFL at Time 1 are more likely to demonstrate greater increases in social identity development behaviors over time were supported. These findings make sense because transformation is a core component of TFL perceptions (Bass 1985), and employees who considered themselves to be highly TFL at Time 1 were more likely to have already developed social identity behaviors via the associated transformational effects.

Hypotheses 4, 5, 6, 7, 8, and 9 predict that increases in SC, AC, and GSE development behaviors positively relate to increases in TP development behaviors and OCB development behaviors. That is, when social identity development behaviors increase over time, TP development behaviors and OCB development behaviors should also increase. Based on Table 1, I found that increases in SC, AC, and GSE development behaviors significantly related to increases in TP (SC: 0.33,  $p < .01$ ; AC: 0.34,  $p < .01$ ; GSE: 0.1,  $p < .01$ ) and OCB development behaviors (SC: 0.34,  $p < .01$ ; AC: 0.42,  $p < .01$ ; GSE: 0.23,  $p < .01$ ). Therefore, Hypotheses 4, 5, 6, 7, 8, and 9 are supported, which state that increases in social identity development behaviors would positively relate to



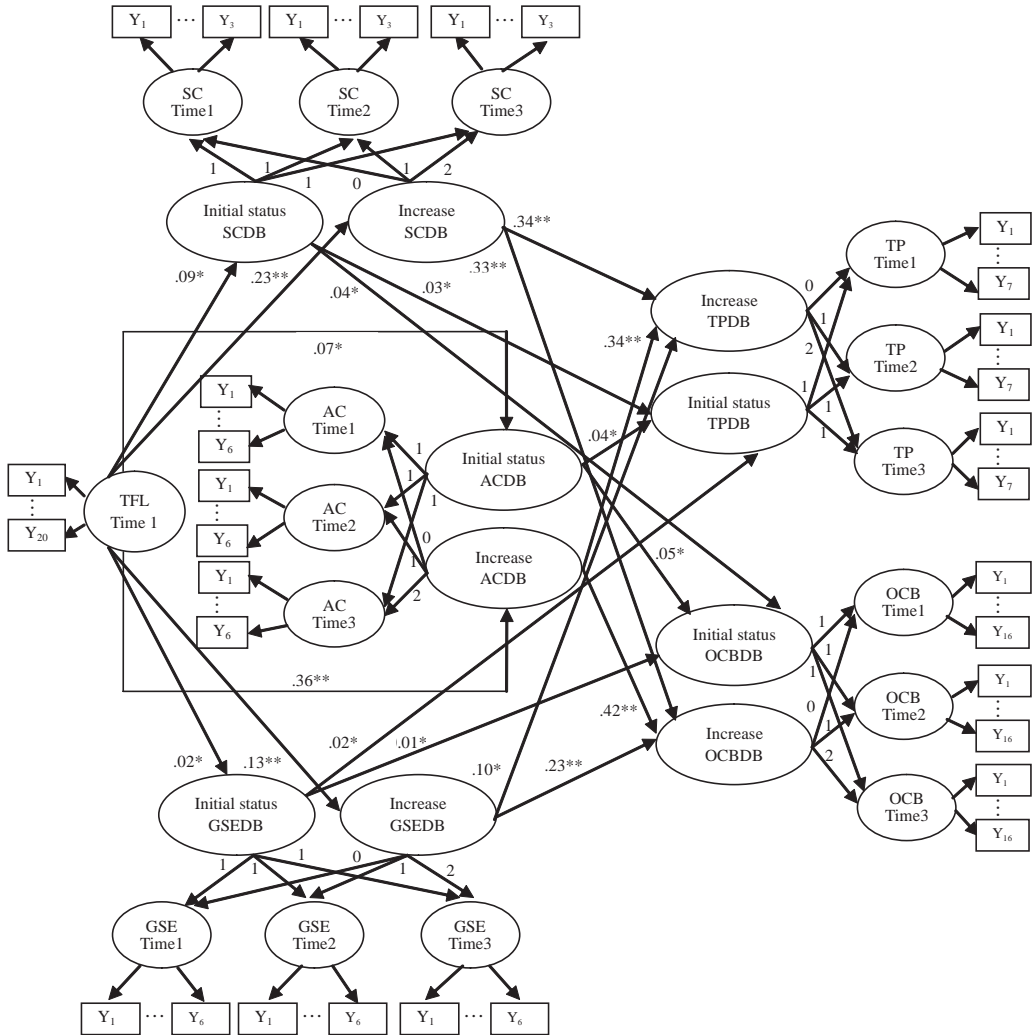


Figure 2. Latent growth model for this study.

Note: AC = Affective commitment; ACDB = Affective commitment development behavior; GSE = Group self-esteem; GSEDB = Group self-esteem development behavior; OCB = Organizational citizenship behavior; OCBDB = Organizational citizenship behavior development behavior; SC = Self-categorization; SCDB = Self-categorization development behavior; TFL = Transformational leadership; TP = Task performance; TPDB = Task performance development behavior;  $Y_n$  = Measurement items. \* $p < .05$ ; \*\* $p < .01$ .

increases in TP and OCB development behaviors. Furthermore, the initial status of SC, AC, and GSE development behaviors also positively related to the initial status of TP and OCB development behaviors. In other words, respondents who reported high levels of SC, AC, and GSE development behaviors at Time 1 also reported

high levels of TP and OCB development behaviors at Time 1.

### Discussion

An important result of my analysis is that beyond a certain point, there is an emphasis on how TFL



**Table 1.** Test results of latent growth model

	ISSCDB	ISCDB	ISACDB	IACDB	ISGSEDB	IGSEDB	ISTPDB	ITPDB	ISOCBDB	IOCBDB
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
Control variables										
Gender	.02	.08	.01	.02	.01	.04	.02	.05	.03	.04
Age	.08	.11	.08	.02	.06	.02	.05	.06	.03	.01
Job tenure	-.04	-.11	-.09	-.03	-.06	-.08	-.05	-.04	-.05	-.08
Antecedent variables										
TFL	.09*	.23**	.07*	.36**	.02*	.13**				
ISSCDB							.03*		.04*	
ISCDB								.33**		.34**
ISACDB							.04*		.05*	
IACDB								.34**		.42**
ISGSEDB							.02*		.01*	
IGSEDB								.10*		.23**

Note: IACDB = Increase on affective commitment development behavior; IGSEDB = Increase on group self-esteem development behavior; IOCBDB = Increase on organizational citizenship behavior development behavior; ISACDB = Initial status on affective commitment development behavior; ISCDB = Increase on self-categorization development behavior; ISGSEDB = Initial status on group self-esteem development behavior; ISOCBDB = Initial status on organizational citizenship behavior development behavior; ISSCDB = Initial status on self-categorization development behavior; ISTPDB = Initial status on task performance development behavior; ITPDB = Increase on task performance development behavior; TFL = Transformational leadership. \* $p < 0.05$ ; \*\* $p < 0.01$ .

influences individuals' social identity development behaviors via the latent growth model.

### *Implications of the theory and methodology*

Within social psychology, Tajfel's (1978) social identity has become central to the discipline, as well as in conceptual and empirical work in anthropology and cultural studies (e.g., Eriksen, 2001; Holland, 1997), wherein it has pushed the concept of identity to the forefront of contemporary academic discussions. However, subsequent research has primarily utilized the limited unidimension perspective of social identity to explain its antecedents and consequences (e.g., Oldmeadow & Fiske, 2010; Trötschel, Hüffmeier, & Loschelder, 2010). We have therefore attempted to rectify this by investigating the multidimension of social identity (e.g., Bergami & Bagozzi, 2000; Ellemers et al., 1999) with due consideration of the underlying nature by including the three distinct aspects of social identity from the changes

in organization development behaviors. Moreover, I are the first to draw social identity into the perspective of development behaviors in order to explain how individuals' behaviors are sculpted. That is, individuals' social identity development behaviors could indeed be influenced by the perception of TFL at Time 1, and this impact subsequently could foster job performance development behaviors.

Regarding variable growths and how these elicit subsequence variable growths, my study opens a new direction for the literature; that is, this study not only contributes to the TFL and social identity literature in the context of applying distinct aspects of social identity to the explanation of job performance, but also proposes a growth perspective of variables and shows how these variable growths (e.g., social identity) shape the growths of their consequence variables (e.g., job performance). Thus, my study provides important first evidence of the value of the latent growth modeling approach in understanding and identifying individuals' development behaviors,

which opens a new and important avenue of future organization behavior research in development behaviors studies.

### *The implications of management*

The results of this study suggest that through a leader's TFL behaviors, internal organizational management may transform followers into identification outcomes. First, my results suggest that social identification can enhance job performance and that these improvements in job performance are likely to take the form of both task performance and OCB. This finding suggests that, rather than spreading resources over various practices aimed at assessing and improving a variety of attitudes and motivational states, it may be worthwhile focusing resources on practices that enhance employee social identity through TFL. In other words, employees' social identification toward their work groups plays a dominant role in their job performance. Second, my results also suggest that a good job performance by an employee may be achieved when TFL behaviors are accompanied by the enforcement of social identification development behaviors. Social identification development behaviors also provide a strategic focus for TFL behaviors and enable transformational leaders to be more effective in directing employee behaviors toward achieving high job performance development behaviors. Finally, I suggest that transformational behaviors can be incorporated into training courses to improve follower outcomes and yield better results in comparison to those achieved via eclectic leadership training (e.g., managerial skills surveys, 360-degree feedback instruments).

### *Limitations and further research*

The results of this study suggest that the three different aspects of social identification serve as meaningful constructs that have several different avenues of unexplored content. Future research could test a broader range of predictors that are linked to particular aspects of social identification and might consider individual difference variables

that might predict employee identity with work groups, such as hardiness and locus of control (Maslach, Schaufelli, & Leiter, 2001).

Second, even though I collected three waves of data over a 10-month period, my research design did not allow for strong causal inferences. Longitudinal designs with more measurement waves and lengthier time frames are needed to provide stronger causal evidence. Nevertheless, objective or archival measures of such participation would be especially useful for further research.

Third, as social identity theory is a collective-level (group-level) conceptualization (e.g., awareness of one's membership in a social group, a positive or negative value connotation applied to the group, and a sense of emotional involvement with the group), further research should consider employing hierarchical linear modeling (HLM) (Raudenbush & Bryk, 2002) to explore cross-level inference in more detail.

Finally, the sample for this study is limited to IT firms in Taiwan. Although this may be a valid concern, the factor structure of the construct scale with employees of this study may be similar to that for employees in other firms. Moreover, this study was more interested in the commonality of the factors, rather than in loadings of the first-order factors. A previous study also argued that the use of specific subjects is justifiable when the goal is not to generalize results but to test a theory (Calder, Phillips, & Tybout, 1981). Nevertheless, the generalization of findings may be specific to salespeople brought up in the Chinese culture of Taiwan, where the society accepts an unequal distribution of power and preference for strong ties among people. Future research may extend this model to other cultural and geographical settings and examine whether these findings can be generalized to organizational contexts across different countries.

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